United States Department of Agriculture
Natural Resources Conservation Service

Pest Management

IPM for Apple and Peach Production

Virginia Conservation Practice Job Sheet 595

Definition of Practice
Managing pests and the environmental impacts of pest management activities using reduced-risk pesticides or reduced risk pesticides and mating disruption

Purpose
This practice is applied as part of a conservation system to mitigate negative impacts of pest management on soil resources, water resources, air resources, plant resources, animal resources, and/or humans and to protect and enhance quantity and quality of agricultural outputs.

Conditions where Practice Applies
This practice is applicable on land where apples and peaches are grown and where insect pests will be managed using environmentally friendly methods including reduced risk insecticides and mating disruption. The use of mating disruption will reduce the number of insecticide applications.

General Criteria and Specifications
NRCS shall not develop pesticide recommendations or change label instructions or recommended specifications for pesticide application. Virginia Cooperative Extension Service will provide the technical expertise for implementation and verification of the use of the Basic and Advanced IPM. The pest management component of a conservation plan shall be developed and implemented in compliance with all applicable Federal, Tribal, State, and/or local regulations. Cooperator agrees to attend a training session developed and delivered by the Virginia Cooperative Extension for implementing the specifications contained within this job sheet.

<u>Basic IPM Specifications</u>

Pest populations shall be documented through scouting records and moth captures in pheromone traps.

Trapping shall be initiated in advance of first flight of each species. Use at least 2 traps per insect species for every 10 acre block. Use 1 additional trap per insect species per additional 10 acres. Record weekly pheromone trap counts for:

- Apple – codling moth, oriental fruit moth, tufted apple budmoth, or other leaf rollers
- Peach – oriental fruit moth, lesser peachtree borer, peachtree borer

Management decisions for oriental fruit moth, codling moth and tufted apple budmoth shall be based on information from pheromone traps and degree day based egg hatch models.

Use at least four complete applications (or eight alternate row middle applications) of two or more reduced risk pesticides from at least two different resistance groups (Tables 1 and 2), documented by spray records.

Advanced IPM Specifications

Pest populations shall be documented through scouting records and moth captures in pheromone traps.

Trapping shall be initiated in advance of first flight of each species. Use at least 2 traps per insect species for every 10 acre block. Use 1 additional trap per insect species per additional 10 acres. Record weekly pheromone trap counts for:

- Apple – codling moth, oriental fruit moth, tufted apple budmoth, or other leaf rollers
- Peach – oriental fruit moth, lesser peachtree borer, peachtree borer

Management decisions for oriental fruit moth, codling moth and tufted apple budmoth shall be based on information from pheromone traps and degree day based egg hatch models.

Use at least two complete applications (or four alternate row middle applications) of two or more reduced risk pesticides from at least two different resistance groups (Tables 1 and 2), documented by spray records.

Use mating disruption to manage one or more documented insect pests (Table 3).

Operation and Maintenance

The producer/client is responsible for the operation and maintenance of the IPM plan.

Records of plan implementation will be maintained for a period of five years or longer than five years if required by other federal, state, or local ordinances, programs, or contract requirements and will include:

- Insecticide application records
- Scouting and pheromone trapping records
- Degree-day records for codling moth, oriental fruit moth, and where applicable, tufted apple budmoth

Replace pheromone trap liners as required.

Replace pheromone lures according to manufacturer’s recommendation.

Specifications

Site-specific requirements are listed on this specification sheet. This job sheet is provided as a component of a resource conservation plan. Plan maps, location of fields to be managed, complementary conservation practices and measures, other relevant information and additional specifications may be included. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See Conservation Practice Standard *Pest Management* (595).

Client:	**Farm #:**
Field(s):	**Tract #:**
Prepared By:	**Date:**

Purpose (check all that apply)	
☐ Minimize negative impacts of pest management on soil resources, water resources, air resources, plant resources, animal resources, and/or human	☐ Protect and enhance quantity and quality of agricultural outputs.

Type of IPM (check all that apply)	
☐ **Basic IPM**	☐ **Advanced IPM**

Existing Pesticide Regimen (in typical prior year)	
Pesticide	**# of applications**

Planned IPM Treatment

Orchard # or Name	**Pest(s) Targeted**	**Reduced Risk Pesticides** Basic IPM – minimum of 4 complete sprays Advanced IPM – minimum of 2 complete sprays & mating disruption (pesticides must be from at least 2 different resistance groups see Tables 1 & 2)	**Mating Disruption Products** (Advanced IPM only see Table 3)

Pesticide Application Record

(one for each orchard block within the program)

Orchard # or Name:

Application date	Product Name and Formulation	Rate (amount of formulated product/acre)	Water volume (gallons/acre)	Application method (ARM or complete)

Scouting, Pheromone Trapping and Degree-day Records:

Apple

(One for each orchard block within the program.)

Orchard # or Name:

		Pheromone Trap Counts (avg. number of moths/trap/week)			Degree-days from Biofix		
Date	Scouting Activity Performed	Codling Moth	Oriental Fruit Moth	Tufted Apple Budmoth	Codling Moth	Oriental Fruit Moth	Tufted Apple Budmoth

Scouting, Pheromone Trapping and Degree-day Records: **Peach** (One for each orchard block within the program.)					
Orchard # or Name:					
		Pheromone Trap Counts (Avg. number of moths/trap/week)			
Date	Scouting Activity Performed	Oriental Fruit Moth	Lesser Peachtree Borer	Peachtree Borer	Degree-days from Biofix for Oriental Fruit Moth

Design Approval:
Pest management strategies planned meet the specifications attached and were developed by a professional pest management specialist or other qualified individuals in consultation with Virginia Cooperative Extension Specialist.

PEST MANAGEMENT SPECIALIST PROVIDING ASSISTANCE:

Design Planned By: _____ Date: _____

Job Title: _____

This job sheet will be reviewed and/or revised on the following schedule:
_____

Client's Acknowledgement Statement:
The client acknowledges that:

a. They have received a copy of the pest management plan and understand the contents and requirements.
b. It is the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.
c. They agree to attend a training session on implementing these specifications with Virginia Cooperative Extension when developed.
d. They are required to obtain annually updated copy of the Virginia Cooperative Extension Tree Fruit Bulletin for Commercial Tree Growers.
e. They agree to record and keep annual pesticide application records for orchard blocks entered into the program and make these records available to VT Extension Specialist.
f. They agree to their inclusion on the VT Winchester Pest Update list-serve.

Accepted by: _____ Date: _____

Virginia Cooperative Extension Review:

I did make a field visit to the orchard on _____ and have also completed a review of the client's records and/or documentation. Both the field visit and documentation of the scouting and application records indicate the IPM practices of reduced risk pesticides and /or mating disruption have been applied on the farm(s) indicated below. (Attach additional documentation if necessary)

Farm _____ Tract(s) _____ Field/Block_____

The client attended a VCE IPM training pertaining to tree fruit reduced risk pesticides and mating disruption on _____
Date

Review by: _____Date: _____

Title: _____

NRCS Certification:

I have completed a review of the documentation provided by the VCE and after conversation(s) with the producer I certify the reduced risk pesticides and /or mating disruption requirements of this plan have been applied according to the required specifications.

Certified by: _____ Date: _____
District Conservationist

Table 1. Reduced-risk pesticides for use on APPLES in Virginia (*source: VA Cooperative Extension*)

INSECTICIDES		
Resistance Group	***Compound***	***Trade Name***
4	**Neonicotinoids** • acetamiprid • clothianidin • imidacloprid • thiacloprid • thiamethoxam	**Neonicotinoids** • Assail • Clutch • Provado • Calypso • Actara
5	**Spinosyns** • spinosad • spinetoram	**Spinosyns** • SpinTor • Delegate (pending)
6	**Avermectins** • emamectin benzoate	**Avermectins** • Proclaim
7	**Insect Growth Regulator** • pyriproxyfen	**Insect Growth Regulator** • Esteem
15	**Insect Growth Regulator** • novaluron	**Insect Growth Regulator** • Rimon
16	**Insect Growth Regulator** • buprofezin	**Insect Growth Regulator** • Centaur
16A	**Insect Growth Regulator** • methoxyfenozide	**Insect Growth Regulator** • Intrepid
22	indoxacarb	• Avaunt
Other pathogens	Codling moth granulovirus	• Cyd-X • Carpovirusine
Unknown	kaolin clay	• Surround
Novel but as yet unknown	rynaxypyr	• Altacor (pending)
MITICIDES		
Resistance Group	***Compound***	***Trade Name***
6	**Avermectins** • abamectin	**Avermectins** • Agri-Mek
10	clofentizine hexythiazox etoxazole	• Apollo • Savey • Zeal
23	spriodiclofen	• Envidor

Table 2. Reduced-risk pesticides for use on PEACHES in Virginia (*source: VA Cooperative Extension*)

INSECTICIDES		
Resistance Group	***Compound***	***Trade Name***
4	**Neonicotinoids** • acetamiprid • imidacloprid • thiacloprid	**Neonicotinoids** • Assail • Provado • Actara
5	**Spinosyns** • spinosad • spinetoram	**Spinosyns** • SpinTor • Delegate (pending)
18A	**Insect Growth Regulator** • methoxyfenozide	**Insect Growth Regulator** • Intrepid
22	**Oxadiazines** • indoxacarb	• Avaunt
Novel but as yet unknown	rynaxypyr	• Altacor (pending)
MITICIDES		
Resistance Group	***Compound***	***Trade Name***
10	clofentezinhexythiazox	• Apollo • Savey
23	spirodiclofen	• Envidor

Table 3. Mating disruption for use on APPLES & PEACHES in Virginia (*source: VA Cooperative Extension*)

MATING DISRUPTION			
Targeted Pest	***Crop***	***Formulation***	***Rate/Acre***
Oriental fruit moth	Apple and peach	Isomate M100 CheckMate OFM-F	100 ties 1.3 fl oz
Codling moth	Apple	Isomate CTT	200 ties
Oriental fruit moth and codling moth	Apple	Isomate CM/OFM TT	200 ties
Lesser peachtree borer	Peach	Isomate LPTB	100 ties
Peachtree borer	Peach	Isomate P	100 ties
Lesser peachtree borer and peachtree borer	Peach	Isomate LPTB	200-250 ties